

**Build
Your
Own**

CORNELL EXTENSION BULLETIN 920

EGG-HOLDING ROOM

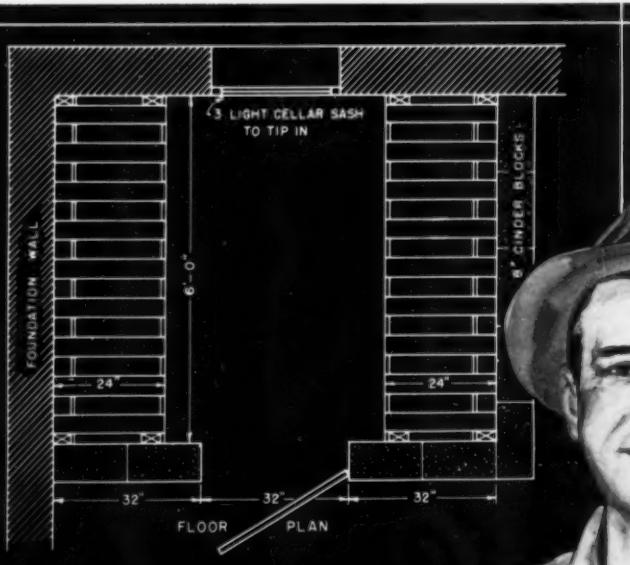
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In Brief

Money spent for an egg-holding room will soon be repaid in the sales of higher quality eggs and fewer worries during warm weather. Quality starts to decline as soon as the egg is laid. An egg-holding room helps to maintain the original quality placed in the egg by the hen.

TO BUILD YOUR OWN EGG-HOLDING ROOM

Place it in a cool location convenient to the henhouse	page 3
Construct it to give many years of service	page 3
Supply plenty of moisture	page 4
Keep the room cool	page 6
Use it the year around	page 7

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Build Your Own

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WHERE

THE northeast corner is usually the coolest part of a building or cellar. Therefore, it is the logical place for the egg-holding room; the northwest corner is the second choice.

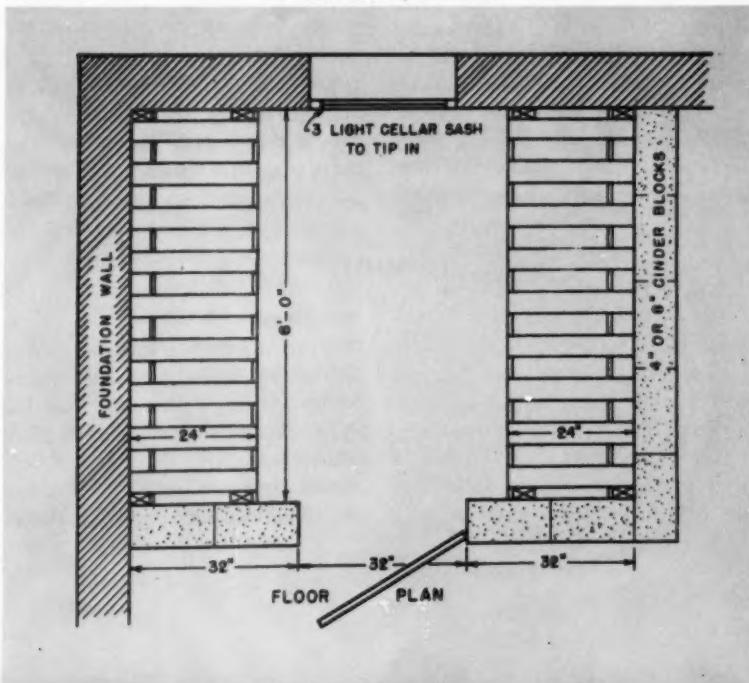
Choose, if possible, a corner for the egg-holding room, because this provides two walls already built. Cellars are preferred over other rooms because of the extra moisture available.

CONSTRUCTION

The plans suggested in this bulletin call for cinder-block walls (figure 1). You can erect these quickly and they are more resistant to moisture damage

than is untreated wood. Wood treated with a preservative makes an acceptable wall. For the racks and door, use treated wood. A smooth-finished con-

Figure 1. Let this floor plan serve as a guide. Construct your egg-holding room to fit the needs of your farm.



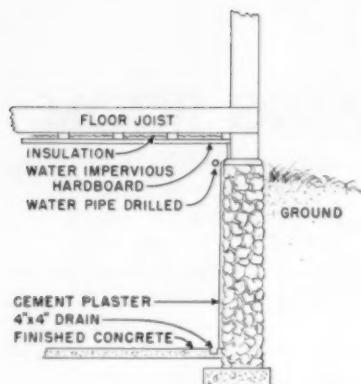


Figure 2. Egg-holding rooms below ground level are easier to keep cool than those above ground. Walls next to earthen embankments need not be insulated.

crete floor with a drain along the inside of each wall is desirable.

If you plan to control egg-room temperature and humidity, insulate the ceiling and all the walls except those shielded by earthen embankments (figure 2). Use double-thickness insulation, such as rock wool, balsam wool, spun glass, or a similar material. To masonry or rough-surfaced walls, apply nailing strips (figure 3). These strips support the insulation and also

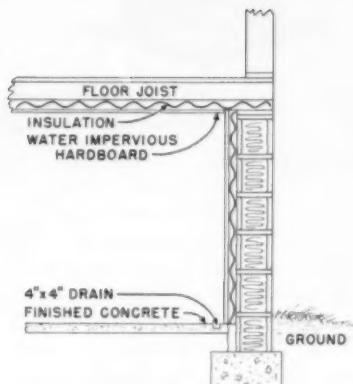


Figure 3. Apply nailing strips to masonry or rough-surfaced walls before insulating. These strips support the insulation and provide a nailing surface for the wall board.

provide a nailing surface for the cement asbestos board that covers the insulation. The cement asbestos board protects the insulation, acts as a barrier to loss of humidity, and provides smooth walls for the interior of the egg-holding room.

You may readily adapt the size of the egg-holding room shown in the plan to the needs of your farm. The plans suggested include space for 30 full cases and about 10 empty cases.

HUMIDITY

Always maintain the relative humidity of the air in the egg-holding room between 70 and 80 percent. Ask your egg buyer or county agricultural agent to check the humidity of your egg-holding room from time to time. A sling psychrometer is used to measure the relative humidity of the air.

Importance of Moisture

When the relative humidity of the egg-holding room goes much below 70 percent, air pulls water from the eggs. This same principle takes place when clothes dry. On a humid day, clothes dry slowly; on a clear, dry day, air takes moisture from the clothes

rapidly. Store eggs in a damp place to prevent loss of moisture, for loss of moisture causes loss in weight. Too, as moisture is removed, the air cell becomes larger. This results in lower egg quality.

How to Supply Moisture

Usually a dirt floor supplies enough moisture to keep the air moist in the egg-holding room. If the humidity gets below 70 percent during dry weather, occasionally dump water onto the floor.

If you have a concrete floor in your egg-holding room, you will probably have to supply moisture most of the year. Use any one of the following ways that is most convenient.

1. Dump water onto the floor.

The water evaporates and keeps the humidity in the room above 70 percent.

2. Dump water into sand.

Block off a portion of the floor in the egg-holding room with pieces of 2by4-lumber and fill the space with sand. Add water until it comes within one-half inch of the surface of the sand. If you have running water, you may use an automatic float valve to keep the water to a desired level. Evaporation provides the necessary humidity.

3. Run water onto a concrete wall.

Place a pipe, with small holes drilled in it every 4 or 5 inches, along one wall near the ceiling (figure 4). Allow water to trickle down the wall every day. When the wall is entirely wet,



Figure 4. Concrete walls provide a hard surface for rapid moisture evaporation. Water dripping from small holes in the pipe keep the wall wet.

turn off the water at a conveniently located shut-off valve.

4. Place a cinder chimney block in a pan of water. Keep the block moist by a flow of water controlled by an automatic float valve. Set a fan to blow across it to create air circulation.

5. Use an automatic humidifier.

Humidifiers that automatically maintain the necessary relative humidity (figure 5) are available commercially. Many poultymen use them because they require very little attention.

Figure 5. Once connected to the water supply this automatic humidifier requires little attention. Larger units are available for larger egg-holding rooms.



Figure 6. A recent development is a small refrigerated cooling unit for eggs. This cooler holds 9 cases plus 5 baskets of eggs. It can be placed anywhere that is convenient for grading and packing.

Regardless of how you supply moisture, it is essential to have a wooden rack over the floor. This keeps the egg cases from falling apart and also increases your own comfort. If you keep the walls wet, never let the racks and cases touch the wet wall.

Ask your egg buyer or county agricultural agent to check the humidity for you.



TEMPERATURE

The ideal temperature of an egg-holding room is between 50° and 60° F. In a properly built egg-holding room, the temperature is within this range most of the year. Commercial refrigerating units for both small and large flocks are available (figures 6 and 7).

Importance of Temperature

Temperature is most important in maintaining egg quality, because *heat breaks down the interior of the egg*. Quality deteriorates rapidly if the temperature of an egg goes above 65°F. The higher the temperature, the faster egg quality deteriorates. It is easy to detect any heat damage when eggs are candled at the buyer's station.

It is not necessary to keep the temperature below 50° F. unless you store the eggs for a long time. Eggs stored below 50° F. "sweat" when you return them to room temperature.

Still-air Cooling

It takes about 12 hours to bring the temperature of the eggs down to 60°F. One 3-light cellar window sash helps to regulate temperature and also provides ventilation. Keep the window closed during the day and open at night. Shrubbery planted in front of the window keeps the direct rays of the sun away from the egg room.

Figure 7. Poultrymen with large flocks may want to use a refrigerating unit to maintain low temperatures in the egg-holding room. Units of this type would probably serve the needs of poultrymen with up to 7,000 layers.



Moving-air Cooling

A small electric fan placed near baskets of eggs cools the eggs to the temperature of the egg-holding room in about 2 hours. Seldom is the fan

needed for a longer time. When you use a fan, be sure to have plenty of moisture in the room. If the air in the room is low in moisture, the eggs lose an excessive amount of water.

HOW TO USE YOUR EGG-HOLDING ROOM

Cooling

Bring the baskets of eggs to the egg-holding room as soon as you gather them. Eggs cool more rapidly in wire baskets than in ordinary pails because air can circulate around the eggs. Let the eggs cool over night before you pack them into cases.

Storing Empty Egg Cases

Egg cases, fillers, and flats dry out. Unless they are stored in a cool, moist room for 2 or 3 days before use, they draw moisture from the eggs. A dry case may remove as much as 1 pound of water from a case of eggs. The racks shown in the plan below provide space for about 10 empty cases (figure 8).

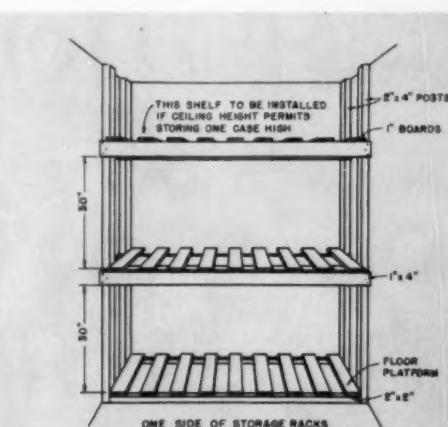
Cleaning, Grading, and Packing

The floor plan for the egg-holding room does not include space for cleaning, grading, and packing. These jobs are best done outside the egg-holding room where the temperature is higher and where working conditions are more comfortable. A convenient arrangement of benches and equipment helps to make the work easier. This is discussed in detail in Cornell Extension Bulletin 898, *Egg-Grading and Packing-Room Arrangement*.

Holding

After you pack the eggs, place the cases on the racks in the egg-holding room until sold. Cool, moist conditions in the egg-holding room maintain the original quality of the eggs.

Figure 8. Well-constructed racks for eggs that are ready for market are essential. Provide enough space for empty cases so that they will be cool and moist when filled.



How to get more MONEY for your EGGS

1. KEEP THE EGGS CLEAN

Allow 1 nest for every 5 to 6 hens.

Use ample shavings or straw for nest material.

Have from 3 to 4 square feet of floor space per bird.

2. KEEP THE LAYERS CONFINED

You will have fewer dirty eggs to clean.

Many consumers don't want dark yolks.

Hens running outside on grass produce eggs with dark yolks.

3. GATHER THE EGGS 3 TIMES A DAY

It will mean cleaner eggs, higher quality eggs, and fewer broken eggs.

Use wire baskets so the eggs will cool quickly.

4. CLEAN THE DIRTY EGGS WELL

Clean the eggs the same day they are gathered.

They are easier to clean and it reduces the chance of damage to the egg.

5. KEEP THE EGGS COOL AND MOIST

Temperature—from 50° to 60° F.

Humidity—from 70 to 80 percent.

Ask your egg buyer or county agricultural agent to check the humidity.

6. COOL THE EGGS OVERNIGHT BEFORE PACKING

Store the empty cases in the egg room so they won't take moisture from the eggs or heat the eggs after packing.

Pack the eggs small end down.

Don't pack any cracked eggs. A few cracked eggs lower the price of the entire case.

7. GRADE THE EGGS FOR SIZE

A few mediums in a case of large eggs cuts the price of the whole case.

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